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The effect of flaxseed extract on skin elasticity of the healing wound in rabbit

Omar Abdul Jabbar, Basma Ezzat Mustafa, Muhanad Ali Kashmoola, Khairani Idah Binti Mokhtar, Siti Aesah Naznin Muhammad and Roslina Binti Abdul Rahim

Kulliyyah of Dentistry, IIUM Kuantan Campus, Pahang

drbasma@iium.edu.my

Abstract

Management of disturbed wounds, large skin defects and the areas where skin tension precludes wound closure is of high clinical importance. Healing in such wounds occurs through epithelization and contraction processes (second-intentions healing) that may result in certain undesirable complications including keloid formations, a poor final cosmetic appearance and the formation of a fragile epithelial layer. The objective of this study is to evaluate the effectiveness of flaxseed gel in enhancing connective tissue firmness and improving skin texture during wound healing by means of viscoelasticity parameter. 30-male white neozealand rabbit were included in this study divided into 3 groups; one group of 10 rabbit received Flax seed gel topically for three times intervals (1, 3, and 7 days); a second group received Fucidin cream as positive control, while third group have not received any treatment as negative control, Skin elasticity measurements were performed using the DermaLab system (Cortex Technology). Photos of treated areas were taken during the procedure. Throughout the study skin elasticity was significantly greater in the Flaxseed group than in other groups. Flaxseed increase elasticity value from (4.2±1.02) to (4.7±1.9) after 7 days treatment (*P=0.003*). while no significant differences were evident in both Fucidin treated group (positive) control (1.0±0.34) and non-treated group (negative) control (1.8±1.4) (p=0.068) group. Hence, Young's modulus of skin elasticity in flaxseed group was more reproducible than other groups demonstrating the comparable efficacy of flaxseed extract in skin elasticity and distensibility. This study showed clearly the therapeutic effect of flaxseed extract on biologic tissue, including stimulation of microcirculation and improvement of fibroblastic cell activity. Elasticity evaluation demonstrated increased density and firmness in the network of collagen/elastic fibers in the dermis and subcutis during wound healing process promise in generating therapeutic gel to be used in wound healing process.

Keywords: Flaxseed; elasticity; skin wound

*Author for Correspondence